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REMARKS

In the Office Action dated June 19, 2009, claims 83-108 were considered. In the Office Action, the Examiner rejected claims 83-108 under 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 103(a). Claims 83-108 are pending.

Rejections Under 35 U.S.C. § 112, First Paragraph

In the previous Office Action mailed October 8, 2008, the Examiner rejected several claims under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In response to that Office Action, Applicants dutifully pointed the Examiner to specific examples which clearly established that Applicants were in possession of the claimed invention at the time of filing. In the most recent Office Action mailed June 19, 2009, the Examiner maintained the earlier rejection and noted that:

The recited value points for specific exemplified embodiments of Applicants' invention are not supportive of the ranges of values now claimed. Further, even though Applicants are now reciting ranges that are, perhaps, more represented by the examples, it is maintained that these examples are not supportive of the range of values for materials encompassed by the claims as they currently stand.

(Office Action, page 3.)

Claims 83-108 remain rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action states that Applicants' supporting disclosure lacks a showing of possession of (1) ranges of amounts of blown vegetable oils used and (2) ranges of amounts for the respective A-side and B-side component parts (Office Action, p. 2).

The Examiner has the burden of making out a *prima facie* case that the appealed claims do not comply with Section 112 first paragraph, written description requirement, by setting forth evidence or reasons why, as a matter of fact, the written description in Appellants' disclosure would not reasonably convey to persons skilled in this art that Appellants were in possession of the invention defined by the claims, including all of the limitations thereof, at the time the application was filed. *See, e.g., In re Alton*, 76 F.3d 1168, 1172, 1175-76, (Fed. Cir. 1996) (citing *In re Wertheim*, 541 F.2d 257, 262-64 (CCPA 1976)). In this case, the Examiner

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has not established facts on the record sufficient to establish a *prima facie* case. The Examiner simply concludes that the claimed ranges are not supported without stating why. Is it because there are not enough Examples illustrating the presently claimed range? Applicants are unable to address the Examiner's rejection/concern without a matter of fact showing as to why the support already provided is not sufficient.

Applicants respectfully submit that the recited ranges are not "perhaps" more represented by the examples specifically brought to the attention of the Examiner, but are rather fully supportive of the range of values for material encompassed by the amended claims. The Board of Patent Appeals and Interferences has consistently held that examples, as those provided to the Examiner in this case, serve as adequate support for ranges such as those claimed in the instant case and fully satisfy the written description requirement.

In *Ex Parte Steven L. Schilling and Edward E. Ball*, Appeal No. 2009-004616 of Application No. 10/154,028, decided July 13, 2009, the Board reversed the Examiner's decision where the Examiner held that specification Examples 2 and 3, found in Table 3 of the specification, did not provide sufficient descriptive support for rigid polyurethane foams to which the claims in question had been limited. These claims had the proviso "wherein the rigid polyurethane foam has a closed cell content of at least 87% closed cells average." The Board found that the polyurethane foam illustrated in specification Examples 2 and 3 had 87.0% and 88.5% closed cells average, respectively. The Board held that this percentage of closed cells average fell within the percent of closed cells claimed. Thus, the Board noted:

These two examples are sufficient evidence establishing that the written description in the specification reasonably conveys to persons skilled in this art that Appellants were in possession of the invention defined by the appealed claims, including all the limitations thereof at the time the application was filed.

(*Ex Parte Schilling*, page 2).

Further, the Board pointed out that the mere number of examples alone is not dispositive with respect to whether, as a matter of fact, the written description in the specification establishes to persons skilled in this art that Appellants were in possession of the invention defined by the claims. In that case, the Board held that two examples were enough to meet the written description requirement. In the case presently pending, Applicants have

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provided a multitude of Examples which have both defined the upper and lower limits of the amended claim ranges and have provided several other examples that fall clearly within those limits. Such evidence is a clear showing of Applicants compliance with the written description requirement.

Similarly, in *Ex Parte Jackson*, the Board found that a claim which recited a carbon derivative from 4% to 20% was fully supported by specification examples showing 4%, 15%, and 20% of the amount of that carbon derivative (*Ex Parte Jackson*, 110 USPQ 561, 562 (BPAI, 1956)). In yet another case, *Ex Parte Francesco Masi*, Appeal No. 1998-2451 of Application No. 08/317,826, decided September 26, 2002, the Board reversed the finding of the primary Examiner where the Examiner found that there was no support in the specification for the phrase "P is between 1 and 2." In their Brief before the Board, Applicants argued that the range of P is between 1 and 2 and is fully supported by three examples which cover the lower limit of "P is 1," the upper limit of "P is 2," and the midpoint of "P is 1.5." (*Ex Parte Masi*, page 3). Citing *Ex Parte Jackson*, the Board found that the values of 1, 1.5 and 2 was an appropriate description to support the claimed range of "P is between 1 and 2." Thus, based on these three examples wherein the limits were defined in the examples, as well as a midpoint identified falling between these limits, the Board was able to find adequate support for the claimed range as well as full compliance with the written description requirement.

In the present case, not only are the upper and lower limits defined in the examples for the claimed ranges, but several examples are also provided which show amounts falling within the claimed ranges. Thus, Applicants respectfully submit that the examples submitted in the April 8, 2009, Response show that Applicants were in possession of the invention as claimed at the time of filing and further show that Applicants' claimed ranges were properly supported by the specification as originally filed in compliance with the Section 112, first paragraph, requirements.

Applicants respectfully submit that the application fully discloses (1) ranges of amounts of blown vegetable oils used and (2) ranges of amounts for the respective A-side and B-side component parts. Specifically, with respect to ranges of amounts of blown vegetable oils used, Applicants respectfully submit that more than adequate support exists in the originally filed disclosure as detailed in our response filed April 9, 2009. The range of amounts of blown

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vegetable oil used in claim 83 is “from 70% by weight to 98.8% by weight.” In Applicant’s April 8, 2009, response, 48 examples were submitted showing percentages of blown vegetable oils used in the composition falling clearly within this range. Specifically, Example 5 calls for a 70% amount of blown vegetable oil, and Examples 130 and 129 call for a 98.8% amount of blown vegetable oil used. The other 45 examples brought to the attention of the Examiner point to percentages which fall within the limits established by Examples, 5, 129, and 130. Ranges found in Applicant’s claims need not correspond exactly to those disclosed in the specification. The issue is whether one skilled in the art could derive the claimed ranges from the disclosure. *Vas-cath Inc. v. Mahurkar*, 935 F2d 1555, 1566, (Fed. Cir. 1991). The Patent Act and the Federal Circuit require only sufficient description to show one of skill in the art that the inventor possessed the claimed invention at the time of filing. *Union Oil Company of CA v. Atlantic Richfield Co.*, 208 F3d 989, 997 (Fed. Cir. 2000).

Applicants respectfully submit that at least the 48 examples noted below show that Applicants possessed the claimed invention at the time of filing.

Example	Percentage
3	92.5
4	85
5	70
9	85
10	80
11	80
12	73
13	85
14	85
15	95.2
17	96
19	76.9
25	78
26	88
27	97
34	89
41	78
44	90.9
48	81
50	83

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Example	Percentage
53	98
61	90.9
63	90
65	94
68	95
73	98
75	86.5
81	87
84	85
87	86.9
90	96.7
93	80
95	75.9
101	86.9
105	86.9
108	93.3
123	94.6
124	92
127	95.7
128	95.9
129	98.8
130	98.8
131	76.4
132	76.4
133	83
134	97.4
135	97
136	98.5

Applicants respectfully submit that examples in the present application also provide adequate support for the presently pending claim 101, which claim as range of from 52% to 96% by weight of blown vegetable oils used. These examples indicate that Applicants possessed the claimed invention at the time of filing.

Example	Percentage
3	92.5
4	85

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Example	Percentage
5	70
6	52
9	85
10	80
11	80
12	73
13	85
14	85
15	95.2
17	96
19	76.9
25	78
26	88
34	89
41	78
44	90.9
48	81
50	83
61	90.9
63	90
65	94
68	95
75	86.5
81	87
84	85
87	86.9
93	80
95	75.9
101	86.9
105	86.9
108	93.3
123	94.6
124	92
127	95.7
128	95.9
131	76.4
132	76.4
133	83

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With respect to ranges and amounts for the respective A-side and B-side component parts, Applicants respectfully submit that support for the ranges claimed in claims 84 and 85 may be found expressly in various examples of the present application. Specifically, support for claim 84 (“from 31 to 100 parts A-side to 100 parts B-side”) is shown in at least the following 45 examples. These examples indicate the limits for the claimed range, both 31 parts and 100 parts A-side, are exemplified. Moreover, other Examples falling within those limits are also shown.

Example	Parts A-side
1	55
2	46
3	61
4	61
5	61
7	38
8	31
9	60
10	40
11	100
12	61
13	80
14	61
17	61
18	61
20	57
21	71
22	45
24	57
28	61
29	67
30	90
31	61
32	74
33	55
35	61
37	67
38	67
40	100
42	61
43	61

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Example	Parts A-side
46	40
51	56
52	54
54	56
55	40
58	41
59	61
60	45
62	61
64	61
66	61
67	61
71	61
74	45

Similarly, support for claim 85 ("from 61 parts to 100 parts A-side to 100 parts B-side") is found expressly in at least the following examples. These 27 examples all fall within the claimed range, again showing that Applicants were in possession of the invention at the time of filing.

Example	Parts A-side
3	61
4	61
5	61
11	100
12	61
13	80
14	61
17	61
18	61
21	71
28	61
29	67
30	90
31	61
32	74
35	61
37	67
38	67
40	100

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Example		Parts A-side
42		61
43		61
59		61
62		61
64		61
66		61
67		61
71		61

Claims 83-100 were also rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirements because Applicants recitation of urethane in describing its catalyst allegedly lacks support by the originally filed supporting disclosure (Office Action, p 3). In the response dated April 9, 2009, Applicants pointed the Examiner to express support for "urethane catalyst" as found in paragraph [0040]. This paragraph of the originally filed specifications expressly discloses urethane catalysts. Further, Examples 1-5, 7-13, 18, 24, 110-112, 115, and 118 indicate urethane catalysts, such that it would be clear to one skilled in the art that Applicants were in possession of the claimed invention at the time of filing.

The Office Action further states that claims 83-108 were again rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement stating that Applicants' recitation of ranges of heat values as set forth in the claims (specifically claims 83, 93, 94, 96, 97, and 101) were not supported by the originally filed supporting disclosure (Office Action, p. 4). Claims 83, 93, 94, 96, 97, and 101, claim ranges of 198° F to 325° F (claims 83 and 97); and 198° F to 250° F (claims 93, 94, 96, and 101). Applicants respectfully submit that support for the presently pending claimed temperature ranges may be found at least in the following Examples, thereby demonstrating that Applicants were in possession of the invention at the time of filing:

Example		Temperature (F)
25		230
26		220
27		202
41		240

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48	227
50	250
63	325
65	235
68	200
73	205
91	100
93	212
101	198

The Office Action further states that claims 84 and 85 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement stating that Applicants' recitation of ranges of amounts of transesterified polyol are not supported by the originally filed supporting disclosure (Office Action, p. 5).

Claim 84 and claim 85, since it depends from claim 84, recite a range of the amount of transesterified polyol in the B-side of from 27.5% by weight to 99.6% by weight of the B-side. Applicants submit that support for the amount of transesterified polyol in the B-side ranging from 27.5% by weight to 99.6% by weight of the B-side may be found in the various Examples of the originally filed specification. For example, in Example 54 the transesterified polyol makes up 27.5% by weight of the B-side while in Example 98 the transesterified makes up 99.6% of the B-side. These values represent the upper and lower claimed values. Other Examples show values within this range, including at least Examples 7-9 (75%, 53.6%, and 93.6%), 80 (97.2%) and 88 (98%). Thus, Applicants respectfully submit that the Examples, as specifically detailed in the originally filed disclosure, adequately support a range of at least 27.5% to 99.6% transesterified polyol in the B-side.

In view of all of the above, Applicants respectfully request withdrawal of the rejections based upon 35 U.S.C. § 112, first paragraph.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 83, 86-91, 94, 97-101 and 106-108 are rejected under 35 U.S.C. §103(a) as being unpatentable over Croft U.S. Patent No. 5,688,860 in view of Burke U.S. Patent No. 4,185,146 and Trowell U.S. Patent No. 4,720,571 (Office Action, p. 6). It appears that the Examiner has attempted to show that the elements of the pending claims were each

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independently known. While Applicants disagree as discussed above, even if true this is not enough to support a *prima facie* case of obviousness. The Supreme Court stated, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art." *KSR* at 1741.

Specifically, the Office Action states "Croft discloses polymer materials comprising the reaction of isocyanates, isocyanate reactive material, catalysts, plasticizers, extenders/crosslinkers, and other material of Applicants' claims" (Office Action, p. 6). Applicants submit that Croft does not disclose (expressly or inherently) or suggest the presently pending claimed inventions. In particular, Applicants' claim recites that the transesterified polyol is produced using an esterification catalyst or by heating the mixture to a temperature of from 198° F to 325° F. Again, Croft does not disclose the use of an esterification catalyst or heating the mixture. Croft only discloses the use of a catalyst, for catalyzing the urethane reaction or heat for accelerating crosslinking of the urethane reaction. As such, Applicants respectfully submit that contrary to the Examiner's assertions, Croft does not disclose or teach any transesterification at all much less "to the degree defined by the claims." If this rejection is maintained Applicants request the Examiner detail factually how the Examiner believes transesterification is occurring "to the degree defined by the claims." Claim 83, for example, requires a first polyol, a blown vegetable oil, and either an esterification catalyst to catalyze the transesterification reaction or heating of the mixture.

"The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court, quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained be mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" MPEP 2141, *KSR* at 1741, 82 USPQ2d at 1396.¹

¹ 37 C.F.R. §1.104(c)(2) states that "When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained in each rejected claim specified."

Applicants also respectfully submit that it would not have been obvious to one having ordinary skill in the art to combine the teachings of Croft with Burke to arrive at the claimed invention. “[When] the prior art teaches away from combining certain known elements, discovery of the successful means of combining them is more likely to be non-obvious.” *KSR Int’l Co. v. Teleflex Inc.* 127 S. Ct. 1727, 1740 (2007). Based on Croft’s disclosure, Croft teaches away from including a blown oil based upon Burke as asserted by the Examiner. The oil used in Croft is used as a plasticizer. A plasticizer is defined as a “chemical added especially to rubbers and resins to impart flexibility, workability, or stretchability.” (see Merriam Webster Dictionary definition attached). Specifically, Croft himself states in the ‘860 patent that “the plasticizing system is preferably selected so as to be essentially inert with polyurethane/polyurea reaction products and substantially non-exuding” (Croft, col. 11, lines 45-47). Also, the Croft reference expressly defines the term essentially inert in the Summary of the Invention section, wherein Croft states “the term ‘essentially inert’ as used herein means that the plasticizer does not become cross-linked into the polyurethane/polyurea reaction product.” (Croft, col. 3, lines 38-40) (emphasis added). Thus, if the plasticizer does not become cross-linked into the polyurethane/polyurea reaction product, there is no urethane reaction of the oil of Croft which is used as a plasticizer. Thus, Applicants submit that the Croft reference itself discourages one of ordinary skill in the art from substituting a reactive component for the plasticizer let alone modifying the non-reactive vegetable oil plasticizer of Croft by blowing and replacing the plasticizer that does not become cross-linked with the blown vegetable oils that do contain hydroxyl groups that become cross-linked.

The law clearly states that if proposed modification (e.g., modifying the teachings of Croft to incorporate the blown oil from Grant) would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F. 2d 900, (Fed. Cir. 1984). MPEP § 2143.01(V). Here, the modification proposed by the Examiner of using a blown vegetable oil would render the Croft reference unsatisfactory for its intended purpose. The disclosure in Croft states that the intended purpose of the plasticizer is to be “essentially inert.” Blown vegetable oil which contains hydroxyl groups that are reactive in a urethane system is not a component which could be added to the teachings of Croft to yield a product that is

satisfactory for the intended purposes of Croft. The teachings of Croft are to make a polyurethane product which is to be used as a sealer or soft putty for filling in space between different elements. Accordingly, Applicants submit that the use of the blown oil containing functional hydroxyl OH groups go against the intended purpose of Croft, which calls for the incorporation of an oil to be a plasticizer that is "essentially inert."

Moreover, the '860 patent to Croft uses soybean oil as a plasticizer in a urethane reaction. With respect to claim 83, the blown vegetable oil is a component of the mixture that forms the transesterified polyol not the final urethane product. Accordingly, not only does Croft not show or suggest the use of a blown vegetable oil, it is distanced still further from the subject matter of claim 83 in that claim 83 is directed toward the use of the blown vegetable oil as a component of a mixture that forms a transesterified polyol, which is thereafter used as a polyol component in the production of a urethane material.

What is more, Croft cannot be combined with the teachings of Burke with any reasonable expectation of success. The Examiner points to column 1 lines 26-33 as disclosing blown vegetable oils to be well known materials used in urethane applications. However, the Burke reference at column 1 lines 26-33 incorporates by reference U.S. Pat. No. 2,833,730, which has proven to be a nonenabling reference. (See the Declaration of John G. Peldonia). When the procedures disclosed in Example 4 of the '730 patent are followed, the intermediate result is a solid mass that cannot be mixed with water and a diethanol amine catalyst as called by the final steps of the procedure disclosed therein. Thus, one of ordinary skill in the art would not think to combine Croft with the teachings of Burke with any likelihood of success.

Again, it is noted that Croft does not teach or disclose any transesterification at all much less to the degree defined by the claims. In view of the fact that, based upon Applicants review of Croft, a transesterified polyol is not disclosed in Croft, one of ordinary skill would not have modified the teachings of Croft to incorporate a transesterification catalyst as assertedly suggested by Trowell. As discussed above, the Croft reference employs a plasticizing system that is selected so as to be essentially inert with polyurethane reaction products. To that end, Croft teaches away from using the presently claimed blown vegetable oils that contain functional hydroxyl OH groups in place of its "essentially inert" plasticizer and further teaches away from using transesterified catalysts in the presence of heat of

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approximately 150°- 250°C as disclosed in Trowell. In fact, Croft does not reference any heating of the B-side mixture such that one can only assume that these preparations of the B-side component part are done at room temperature. The mixture of the A-side and B-side component parts as disclosed in Croft clearly lends itself to a urethane reaction only. Quite simply, there is no teaching or suggestion to transesterify a blown vegetable oil containing reactive hydroxyl groups with another polyol (by heating or the use of a transesterification catalyst) and use the resultant polyol as a B-side reactive polyol in a urethane system to form a material.

The Examiner cites *In re Aller*, 105 USPQ 233, for the proposition that discovering optimal or workable ranges involves only routine skill in the art. However, the court in *In re Yates* 663 F.2d 1054 (CCPA 1981) made it clear that *In re Aller* does not necessarily support such a broad proposition, stating that:

The Solicitor, relying upon *In re Aller*, 42 C.C.P.A. 824, 220 F.2d 454, 105 U.S.P.O. 233 (1955), argues that it is 'not unobvious to discover optimum or workable ranges by routine experimentation.'
In many instances, this may be true. The problem, however, with such 'rules of patentability' (and the ever-lengthening list of exceptions which they engender) is that they tend to becloud the ultimate legal issue-obviousness-and exalt the formal exercise of squeezing new factual situations into preestablished pigeonholes. Additionally, the emphasis upon routine experimentation is contrary to the last sentence of section 103.

Id. at n4. In *Aller*, the prior art showed essentially the same process as recited in the claims, and the prior art suggested the possibility of changing parameters of that process. In contrast, the prior art relied upon by the Examiner in the present case does not even recognize transesterification of a blown vegetable oil let alone recognizing the parameters that should be changed.

With respect to the combination of references suggested by the Examiner, the MPEP sets forth that the standard for obviousness requires that there must be some suggestion, either in the reference or the relevant art, of how to modify what is disclosed to arrive at the claimed invention. MPEP § 2143. The combination of prior art references must have been "obvious to a person with ordinary skill in the art." *KSR Int'l Co. v. Teleflex, Inc. et al.*, 127 S. Ct. 1727 (2007). To be prima facie obvious, there must be an apparent reason why a person of ordinary

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skill in the art would combine the references, and that analysis should be made explicit. Id. Here, not only is there no reason to believe that using a transesterified polyol derived by transesterifying the blown vegetable oil with another polyol alone (see claim 101) and/or as a reactive component in the production of a urethane material as claimed in claim 83 was obvious. There simply is no apparent reason to combine Croft with Burke and/or Trowell absent hindsight.

Accordingly, Applicants submit that the obviousness rejections under 35 U.S.C. § 103(a) is unfounded and should be withdrawn and claims 83-108 be allowed.


Conclusion

Applicants respectfully request entry of this Response, withdrawal of all bases for rejection, and allowance of claims 83-108. In the event the Examiner intends to maintain any of the above rejections or there are any remaining formalities or other issues needing Applicants' assistance, Applicants formally request the Examiner call the undersigned attorney at (616) 949-9610 to hold an interview of the case.

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